Exercise - I (Conceptual Questions) Build Up Your Understanding

1. The young chickens raised specially for meat are called –
(1) Hen (2) Broilers
(3) Cockereals (4) Pullets

2. Fish used in biological control of mosquito is–
(1) Gambusia (2) Hilsa
(3) Scalophagus (4) Gold Fish

3. Which among the following is real product of Honey Bee ?
(1) Honey (2) Pollen
(3) Bee wax (4) Propolis

4. Honey is collected by :
(1) Wasp (2) Housefly
(3) Butterfly (4) Bee

5. Ranikhet disease is associated with :
(1) Honey Bee (2) Hens
(3) Fishes (4) Pigs

6. Rearing of bees is :
(1) Horticulture (2) Apiary
(3) Apiculture (4) Poultry

7. Which of the following is not a plant product:
(1) Hemp (2) Silk
(3) Cotton (4) Flax

8. The insect thrives on *Morus alba* (Mulberry) is
(1) Lac insect (2) Cochineal insect
(3) Honey bee (4) Silk moth

9. Which among the following is secondary product of Honey Bee ?
(1) Honey (2) Pollen
(3) Bee wax (4) Propolis

10. Fish introduced in India by foreigners is :
(1) *Labeo rohita* (2) *Mystus singhala*
(3) Pomfret (4) *Clarius batrachus*

11. Nagpuri buffalo is :
(1) Milker (2) Draught cattle
(3) Dual purpose (4) Grazer

12. Hormone analogue used for inducing lactation in sterile cows is :
(1) Estrogen (2) Progesterone
(3) Relaxin (4) Stilbestrol

13. Tasar silk is obtained from :
(1) *Antheraea* (2) *Bombyx mori*
(3) *Apis indica* (4) *Apis dorsata*

14. Fishes reared in culture fishery in India are :
(1) Salmon and Rohu (2) Salmon and Catla
(3) Catla and Hilsa (4) Rohu and Catla

15. Exotic breeds of poultry are :
(1) White Leghorn and Rhode Island Red
(2) Rhode Island Red and Aseel
(3) Plymoth and Aseel
(4) White Leghorn and Aseel

16. MOET (Multiple Ovulation Embryo Transfer) is method of :
(1) Fish cultivation
(2) Hybridisation of cattle
(3) Birth control
(4) Cloning of sheep

17. Who is the father of white revolution in India?
(1) Banda Vasudev Rao
(2) Verghese Kurien
(3) M. S. Swaminathan
(4) Norman E. Borlaug

18. Wax is obtained from:
(1) Apiculture (2) Sericulture
(3) Lac culture (4) Aquaculture

EXERCISE-I (Conceptual Questions) ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	2	1	3	4	2	3	2	4	1	3	1	4	1	4	1
Question	16	17	18												
Answer	2	2	1												

TG: @Chalnaayaaar

TG: @Chalnaayaaar

Exercise - II (Previous Year Questions) AIPMT/NEET

AIPMT 2003

1. Which endangered animal is the source of the world's finest, lightest, warmest and most expensive wool–the shahtoosh ?
(1) Nilgai (2) Cheetal
(3) Kashmiri goat (4) Chiru

AIPMT 2005

2. The world's highly prized wool yielding 'Pashmina' breed is –
(1) Kashmir sheep–Afghan sheep cross
(2) Goat
(3) Sheep
(4) Goat–sheep cross

AIPMT 2007

3. Which one of the following pair is *mismatched*?
(1) *Bombyx mori* – Silk
(2) *Pila globosa* – Pearl
(3) *Apis indica* – Honey
(4) *Kenia lacca* – Lac

4. Which one of the following is a viral disease of poultry ?
(1) Pasteurellosis
(2) Salmonellosis
(3) Coryza
(4) New Castle disease

AIPMT Pre 2011

5. When two unrelated individuals or lines are crossed, the performance of F_1 hybrid is often superior to both its parents. This phenomenon is called :-
(1) Heterosis (2) Transformation
(3) Splicing (4) Metamorphosis

Re-AIPMT 2015

6. Which of the following diseases is caused by a protozoan ?
(1) Blastomycosis (2) Syphilis
(3) Influenza (4) Babesiosis

7. Outbreeding is an important strategy of animal husbandry because it :
(1) exposes harmful recessive genes that are eliminated by selection
(2) helps in accumulation of superior genes.
(3) is useful in producing purelines of animals.
(4) is useful in overcoming inbreeding depression

NEET-I 2016

8. Which is the National Aquatic Animal of India?
(1) Gangetic shark (2) River dolphin
(3) Blue whale (4) Sea-horse

NEET-II 2016

9. Among the following edible fishes, which one is a marine fish having rich source of omega-3 fatty acids?
(1) Mrigala (2) Mackerel
(3) Mystus (4) Mangur

10. Interspecific hybridization is the mating of:-
(1) Superior males and females of different breeds
(2) More closely related individuals within same breed for 4-6 generations
(3) Animals within same breed without having common ancestors
(4) Two different related species

NEET(UG) 2017

11. Homozygous purelines in cattle can be obtained by:
(1) mating of unrelated individuals of same breed.
(2) mating of individuals of different breed.
(3) mating of individuals of different species.
(4) mating of related individuals of same breed.

TG: @Chalnaayaaar

NEET (UG) 2019

12. Select the **incorrect** statement :-
(1) Inbreeding increases homozygosity
(2) Inbreeding is essential to evolve purelines in any animal
(3) Inbreeding selects harmful recessive genes that reduce fertility and productivity
(4) Inbreeding helps in accumulation of superior genes and elimination of undesirable genes

NEET (UG) 2019 (Odisha)

13. Select the **incorrect** statement regarding inbreeding
(1) Inbreeding helps in elimination of deleterious alleles from the population
(2) Inbreeding is necessary to evolve a pureline in any animal
(3) Continued inbreeding reduces fertility and leads to inbreeding depression
(4) Inbreeding depression can not be overcome by out-crossing

NEET (UG) 2020

14. By which method was a new breed 'Hisardale' of sheep formed by using Bikaneri ewes and Marino rams ?
(1) Inbreeding (2) Out crossing
(3) Mutational breeding (4) Cross breeding

NEET (UG) 2020 (COVID-19)

15. Inbreeding depression is -
(1) Reduced motility and immunity due to close inbreeding
(2) Decreased productivity due to mating of superior male and inferior female
(3) Decrease in body mass of progeny due to continued close inbreeding
(4) Reduced fertility and productivity due to continued close inbreeding

NEET (UG) 2021

16. Which of the following is **not** a step in Multiple Ovulation Embryo Transfer Technology (MOET)?
(1) Cow is administered hormone having LH like activity for super ovulation
(2) Cow yields about 6-8 eggs at a time
(3) Cow is fertilized by artificial insemination
(4) Fertilized eggs are transferred to surrogate mothers at 8-32 cell stage

17. Inbreeding is an important strategy of animal breeding because it
(1) is necessary to evolve a pure line in any animal
(2) helps in accumulation of superior genes
(3) helps in elimination of less desirable genes
(4) All of the above

NEET (UG) 2022

18. Bee-keeping helps to improve the yield of following crops EXCEPT _____.
(1) Sunflower (2) Apple
(3) Mustard (4) Jowar

19. The term 'blue Revolution' is related with :
(1) Development of water reservoirs
(2) Honey and its by products
(3) Fishery industry
(4) Various crop plants and their by products

Re-NEET (UG) 2022

20. Two butterfly species are competing for the same nectar of a flower in a garden. To survive and coexist together, they may avoid competition in the same garden by:
(1) feeding at the same time
(2) choosing different foraging patterns
(3) increasing time spent on attacking each other
(4) predating on each other

EXERCISE-II (Previous Year Questions) ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	4	2	2	4	1	4	4	2	2	4	4	3	4	4	4
Question	16	17	18	19	20										
Answer	1	4	4	3	2										

TG: @Chalnaayaaar

TG: @Chalnaayaaar

Exercise - III Master Your Understanding

EXERCISE-III (A) NCERT BASED QUESTIONS

1. Which amongst the following is used in raising super-milk cows ?
(1) Artificial insemination with pedigree bull
(2) Embryo transplantation
(3) Superovulation of high yielding cow
(4) All the above

2. A new breed of sheep developed in India by cross-breeding, called "Hisardale". It is a cross.
(1) Bikaneri ewes and Marino rams
(2) Marino ewes and Bikaneri rams
(3) Malavari ewes and Bikaneri rams
(4) Bikaneri ewes and Malavari rams

3. In MOET, the animal is either mated with an elite bull or artificially inseminated. The fertilized eggs are collected to transfer to surrogate mothers. Which among these statements is correct.
(1) Fertilized egg is collected at 8-32 cells stage and no need of surgery.
(2) Fertilized egg is collected at 8-32 cells stage and surgery is done for it.
(3) Fertilized egg is collected at only 4 cells stage and it is done by surgery.
(4) Fertilized egg is collected at 64 cells stage and surgery is done for it.

4. To remove the inbreeding depression, the selected animals of the breeding population should be mated with:
(1) Related superior animals of the same breed
(2) Unrelated superior animals of the same breed
(3) Superior animals of the different breeds
(4) Superior animals of the different species

5. The best breeding method for animals that are below average in productivity in milk production and growth rate in beef cattle:
(1) Inbreeding
(2) Interspecific hybridization
(3) Out crossing
(4) Cross breeding

6. The efforts for the development and flourishing of the fishery industry are collectively termed as:
(1) Pink revolution
(2) White revolution
(3) Blue revolution
(4) Green revolution

7. A group of animals related by descent and similar in most characters like general appearance, features, size, configuration, etc., are said to belong to a :
(1) Breed (2) Species
(3) Genus (4) Family

8. Which is not true for MOET in animals?
(1) The female animal is administered with hormones having FSH like activity
(2) More than one ova are matured during a single cycle
(3) The embryo is transplanted in 8-32 cells stage
(4) Eggs are recovered surgically from genetic mother

9. 'Hisardale' is a/an:
(1) Hybrid breed of sheep
(2) Indigenous breed of sheep
(3) Australian breed of sheep
(4) Indian breed of cattle

10. An exotic breed of chicken:
(1) Jersey (2) Marino
(3) Leghorn (4) Bikaneri

11. Mule is a result of:
(1) Inbreeding
(2) Interspecific hybridization
(3) Cross breeding
(4) Intergeneric hybridization

12. Which type of breeding is suitable for combining the characters of two different breeds?
(1) Inbreeding
(2) Cross breeding
(3) Out crossing
(4) Interspecific hybridization

TG: @Chalnaayaaar

13. Select the incorrect statement for apiculture:
(1) It is the maintenance of hives of honeybees for the production of honey.
(2) It is not labour intensive.
(3) Most common species of honey bee in India is *Apis indica*.
(4) Beeswax is a food of high nutritive value which is used in preparation of cosmetics.

14. Sometimes normal mating is not possible between two individuals due to their different behavior and habitats. Which technique is generally used to overcome such type of problems:
(1) Interspecific hybridization
(2) Artificial insemination
(3) Multiple ovulation embryo transfer
(4) Out crossing

15. Which statement is not true about honey bees or honey bee keeping?
(1) Bees are harmful insects for crops.
(2) Honey is a food of high nutritive value.
(3) Beewax can be used in cosmetics items.
(4) Bee keeping is not labour intensive.

16. Which is not true for inbreeding ?
(1) It increases homozygosity
(2) It is done between the animals of same breed
(3) Continuous inbreeding leads to inbreeding depression
(4) It can't be used to obtain pure lines in animals

17. Which type of breeding is used to remove the problem of inbreeding depression in animals?
(1) Inbreeding
(2) Cross Breeding
(3) Out crossing
(4) Inter specific Hybridization

18. Which technique is generally used to obtain a large herd size in short time?
(1) Artificial insemination
(2) Induced breeding
(3) Multiple ovulation embryo transfer
(4) Hybridisation

TG: @Chalnaayaaar

19. Which kind of animal breeding is not correctly matched with its utility ?
(1) To combine characters of two different species - Interspecific hybridization
(2) To combine characters of two different breeds - Cross breeding
(3) To remove inbreeding depression - Out crossing
(4) To obtain pure lines - Out breeding

EXERCISE-III(B) (ANALYTICAL QUESTIONS)

20. Honey bee after discovering the new source of nectar / honey can convey this information but
(1) Cannot convey the direction
(2) Can convey the direction by round or tail waving dance
(3) Can convey the direction by round dance only
(4) Can convey the direction by tail waving dance only

21. A queen Honey Bee lays eggs of :
(1) One type from which all castes develop
(2) Two types, one forming queen and workers and second forming drones
(3) Three types forming queen, drone and workers
(4) Unfertilized eggs die while fertilised ones form all castes.

22. Silkworm larva spins silk from :
(1) Inside to outside
(2) Outside to inside
(3) Random fashion
(4) Anterior to posterior side

23. Three carp fishes, Catla, Labeo and Cirrhina, can be grown together in the same pond more economically as they have:
(1) Positive interactions
(2) Commensalism
(3) Symbiosis
(4) No competition for food

24. In Silkworm, if juvenile hormone is absent at the time of larval moulting, the worm will :
(1) Die
(2) Moult into larval stage
(3) Moult into pupa
(4) Moult into adult

TG: @Chalnaayaaar

25. Which statement is correct ?
(1) *Apis indica* is largest wild honey bee
(2) Wax is waste material of honey bee
(3) V. Frish discovered the transmission methods in honey bee
(4) Drone of honey bee is diploid

26. Commercial silk is obtained from :
(1) Cocoon
(2) Caterpillar
(3) Adult moth
(4) Both egg and adult moth

27. Primary and secondary product of apiculture are:-
(1) Wax is primary product but Honey is secondary product
(2) Honey is primary product but wax is secondary product
(3) Both wax and Honey are considered as secondary product as some nutritive substances are also obtained from Honey bee which are primary product.
(4) No criteria is set to differentiate primary and secondary product in apiculture.

28. If a honey bee is conveying an information, by round dance then the distance of source will be about –
(1) 1000 mtrs
(2) 50 mtrs
(3) 2000 mtrs
(4) 150 mtrs

29. Commercial lac is produced from –
(1) The nest of a type of bird
(2) The exudation of a type of insect
(3) The scale of a type of a fish
(4) The root of a plant

EXERCISE - III ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	4	1	1	2	3	3	1	4	1	3	2	2	4	2	1
Question	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Answer	4	3	3	4	4	2	2	4	4	3	1	1	2	2	

TG: @Chalnaayaaar

Important Notes

Exercise - I (Conceptual Questions) Build Up Your Understanding

1. Hybrids are generally:-
(1) Weak
(2) Strong
(3) Like as parents
(4) Mutants

2. Emasculation is achieved by:-
(1) Removal of anther
(2) Removal of stigma
(3) Removal of entire organisms
(4) Removal of petals and sepals

3. In crop improvement programme haploids are of great importance, because they :-
(1) Grow better under adaverse conditions
(2) Are useful in studies for meiosis
(3) Require only about half the amount of chemical fertilisers compared to diploids.
(4) Give homozygous lines following diploidisation.

4. A new crop triticale has been evolved by intergeneric hybridisation between:-
(1) Wheat and Aegilops
(2) Wheat and rice
(3) Rice and Maize
(4) Rye and wheat

5. If a breeder has to evolve a disease resistant strain, what step will be taken first :-
(1) Hybridisation
(2) Selection of parents
(3) Working out the yield
(4) Looking for the subject in the library

6. Cellular totipotency is demonstrated by :-
(1) Only gymnosperm cells
(2) All plant cells
(3) All eukaryotic cells
(4) Only bacterial cells

7. Modern farmer's can increase the yield of paddy upto 50% by the use of :-
(1) Baculovirus
(2) *Rihizobium*
(3) Cyanobacteria
(4) Farm yard manure

TG: @Chalnaayaaar

8. Somaclonal variations appears in :–
(1) Organism produced through somatic hybridization
(2) Plants growing in highly polluted conditions
(3) Apomictic plants
(4) Tissue culture raised plants

9. Pomato is :–
(1) Somatic hybrid (2) Allopolyploid
(3) Natural mutant (4) (1) and (2) both

10. Plant part, used for culture is called :–
(1) Scion (2) Stock
(3) Explant (4) Callus

11. Protoplast fusion causes :–
(1) Rapid growth of offspring
(2) Somatic hybridization
(3) Production of useful allopolyploid
(4) (2) and (3) both

12. Virus free plant can be obtained through :–
(1) Grafting (2) Callus culture
(3) Shoot tip culture (4) Suspension culture

13. Which of the following hormone is used for shoot differentiation in callus ?
(1) 2, 4–D
(2) Benzyl amino purine (BAP)
(3) Deformylase
(4) Gibberelic acid

14. Which of the following type of culture is used in some interspecific crosses, where endosperm of developing hybrid seed degenerates very early ?
(1) Meristem culture
(2) Shoot tip culture
(3) Embryo culture
(4) Anther culture

15. What is the root of any breeding programme?
(1) Mutation
(2) Green revolution
(3) Genetic variability
(4) Genetic similarity

TG: @Chalnaayaaar

16. Which tropical canes grown in south India had thicker stems and high sugar content but did not grow well in north India?
(1) *Saccharum barberi*
(2) *Saccharum spontaneum*
(3) *Saccharum robustum*
(4) *Sacchrum officinarum*

17. "*Pusa Komal*" variety of cow pea, which developed by hybridisation and selection is mainly resistance for :-
(1) Powdery mildew
(2) Yellow mosaic virus
(3) Bacterial blight
(4) White rust

18. Read the statements carefully :-
(A) Wheat variety, Atlas 66 having a high protein content
(B) SCP is the Alternate sources of proteins for animal and human nutrition
(C) Plants developed by micropropagation will be genetically different to the original plant from which they were grown
(D) Semi-dwarf rice varieties were derived from IR-8 and Taichung Native-1
Find out the correct statements
(1) A, B, C (2) C, D, A
(3) B, C, D (4) A, B, D

19. In which crop resistance to yellow mosaic virus were induced by mutation?
(1) Mung bean (2) Cow pea
(3) Wheat (4) Brassica

20. Smooth leaved and nectar less cotton varieties do not attract which one of following pests?
(1) Aphids (2) Jsssids
(3) Boll worms (4) Shoot borer

21. The main steps of plant breeding programmes is given below.
(A) Cross hybridisation among the selected parents
(B) Testing release and commercialisation of new cultivars
(C) Collection of variability
(D) Selection and testing of superior recombinants
(E) Evolution and selection of parents
Arrange above steps in a systematic way:-
(1) E → C → A → B → D
(2) C → E → A → B → D
(3) C → E → A → D → B
(4) E → C → A → D → B

22. In fungi plant symbiotic association, the fungus symbiont absorb which nutrient from soil and passes it to the plants?
(1) Nitrogen (2) Phosphorus
(3) Magnese (4) Calcium

23. Nobel laureate Norman E. Borlaug developed semi dwarf variety of :-
(1) Wheat (2) Sugarcane
(3) Mustered (4) Chilli

24. Which one of the following is an example of somatic hybridisation?
(1) Bt cotton (2) Pomato
(3) Golden rice (4) All of these

25. IARI, New Delhi has released several vegetables crops that are rich in :-
(1) Vitamin (2) Hormone
(3) Minerals (4) (1) and (3) both

26. Consider the table given below.

Crop	Variety	Insect pests
(A)	Pusa Gaurav	Aphids
Flat bean	(B)	Jassids
Okra	Pusa sawani	(C)

Which one of the following option, gives the correct fill ups for the respective blank (A to C)?

	A	B	C
(1)	Wheat	Pusa Shubhra	Boll worms
(2)	Brassica	Pusa Komal	Fruit borer
(3)	Wheat	Pusa Komal	Boll worms
(4)	Brassica	Pusa Sem 2	Short borer

27. Which vegetable crop rich in vitamin C has released by IARI. New Delhi?
(1) Spinch (2) Lablab
(3) Mustard (4) Carrot

TG: @Chalnaayaaar

28. You are a plant breader. Which trait or character that you have firstly tried to incorporate into crop plants?
(1) Increase crop yield and improved quality
(2) Increase tolerance to environmental stresses
(3) Increase resistance to pathogens
(4) Increase tolerance to insect pests

29. How many percent of the population of India get employees by agriculture?
(1) 82 (2) 62 (3) 17 (4) 92

30. International Rice Research Institute (IRRI) is located at :-
(1) Hyderabad (India)
(2) Manila (Philippines)
(3) New York (U.S.A.)
(4) Tokyo (Japan)

31. Dwarf wheat was developed by firstly :-
(1) M.S. Swaminathan (2) Vavilov
(3) Borlaug (4) B.D. Singh

32. Why crossing with wild relatives is beneficial/because it helps in the transfer of gene of ?
(1) Disease resistance (2) Pest resistance
(3) Drought resistance (4) All the above

33. Hybrid vigour is due to :-
(1) Chiasma (2) Linkage
(3) Crossing over (4) Heterozygosity

34. The process of transferring the cell culture from old medium to fresh culture medium is known as:–
(1) Sterilization
(2) Subculturing
(3) Introduction
(4) Suspension culture

35. Tissue culture is beneficial for :-
(1) Micropropagation
(2) Production of disease free plants
(3) Androgenic haploid
(4) All the above

EXERCISE-I (Conceptual Questions) ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	2	1	4	4	2	2	3	4	4	3	4	3	2	3	3
Question	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Answer	4	3	4	1	3	3	2	1	2	4	4	3	1	2	2
Question	31	32	33	34	35										
Answer	3	4	4	2	4										

TG: @Chalnaayaaar

Exercise - II (Previous Year Questions) AIPMT/NEET

AIPMT 2008

1. Crop plants grown in monoculture are:-
(1) Low in yield
(2) Free from intraspecific competition
(3) characterised by poor root system
(4) highly prone to pests

2. In order to obtain virus-free plants through tissue culture the best method is :-
(1) Protoplast culture
(2) Embryo rescue
(3) Anther culture
(4) Meristem culture

AIPMT 2007

3. Which one of the following statements is correct?
(1) At present it is not possible to grow maize without chemical fertilizers
(2) Extensive use of chemical fertilizers may lead to eutrophication of nearby water bodies
(3) Both *Azotobacter* and *Rhizobium* fix atmospheric nitrogen in root nodules of plants
(4) Cyanobacteria such as *Anabaena* and *Nostoc* are important mobilizers of phosphates and potassium for plant nutrition in soil

AIPMT 2009

4. Somaclones are obtained by :-
(1) Genetic engineering (2) Tissue culture
(3) Plant breeding (4) Irradiation

AIPMT 2010

5. Breeding of crops with high levels of minerals vitamin and proteins is called:-
(1) Biomagnification
(2) Micropropagation
(3) Somatic hybridisation
(4) Biofortification

AIPMT-Pre 2011

6. "Jaya" and "Ratna" developed for green revolution in India are the varieties of :-
(1) Maize (2) Rice
(3) Wheat (4) Bajra

7. 'Himgiri' developed by hybridisation and selection for disease resistance against rust pathogens is a variety of :-
(1) Chilli (2) Maize
(3) Sugarcane (4) Wheat

8. A collection of plants and seeds having diverse alleles of all the genes of a crop is called :-
(1) Herbarium (2) Germplasm
(3) Gene library (4) Genome

AIPMT-Pre 2012

9. Which one of the following is a case of wrong matching ?
(1) Micropropagation In-vitro production of plants in large numbers
(2) Callus-Unorganised mass of cells produced in tissue culture
(3) Somatic hybridization - Fusion of two diverse cells
(4) Vector DNA- Site for t-RNA synthesis

10. Which part would be most suitable for raising virus-free plants for micropropagation ?
(1) Meristem (2) Node
(3) Bark (4) Vascular tissue

AIPMT-Mains 2012

11. Green revolution in India occurred during :-
(1) 1980's (2) 1950's
(3) 1960's (4) 1970's

NEET-UG 2013

12. In plant breeding programme, the entire collection (of plants/seeds) having all the diverse alleles for all genes in a given crop is called :-
(1) germplasm collection
(2) selection of superior recombinants
(3) cross-hybridisation among the selected parents.
(4) evaluation and selection of parents

AIPMT 2014

13. To obtain virus - free healthy plants from a diseased one by tissue culture technique, which part/parts of the diseased plant will be taken :-
(1) Apical meristem only
(2) Palisade parenchyma
(3) Both apical and axillary meristems
(4) Epidermis only

TG: @Chalnaayaaar

AIPMT 2015

14. A technique of micropropagation is :-
(1) Somatic embryogenesis
(2) Protoplast fusion
(3) Embryo rescue
(4) Somatic hybridization

15. Which of the following enhances or induces fusion of protoplasts ?
(1) Polyethylene glycol and sodium nitrate
(2) IAA and kinetin
(3) IAA and gibberellins
(4) Sodium chloride and potassium chloride

Re-AIPMT 2015

16. A protoplast is a cell :-
(1) without cell wall
(2) without plasma membrane
(3) without nucleus
(4) undergoing division

NEET (UG) 2019 (Odisha)

17. In mung bean, resistance to yellow mosaic virus and powdery mildew were brought about by :-
(1) Mutation breeding
(2) Biofortification
(3) Tissue culture
(4) Hybridization and selection

NEET (UG) 2021

18. Match **List -I** with **List - II.**

List -I		**List :– II**	
(a)	Protoplast fusion	(i)	Totipotency
(b)	Plant tissue culture	(ii)	Pomato
(c)	Meristem culture	(iii)	Somaclones
(d)	Micropropagation	(iv)	Virus free plants

Choose the **correct** answer from the options given below.

	(a)	**(b)**	**(c)**	**(d)**
(1)	(iii)	(iv)	(ii)	(i)
(2)	(ii)	(i)	(iv)	(iii)
(3)	(iii)	(iv)	(i)	(ii)
(4)	(iv)	(iii)	(ii)	(i)

19. Which of the following is **not** an objective of Biofortification in crops?
(1) Improve protein content
(2) Improve resistance to diseases
(3) Improve vitamin content
(4) Improve micronutrient and mineral content

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20. Breeding crops with higher levels of vitamins and minerals or higher proteins and healthier fats is called:
(1) Bio-remediation (2) Bio-fortification
(3) Bio-accumulation (4) Bio-magnification

Re NEET (UG) 2021

21. Given below are two statements: one is labelled as **Assertion (A)** and the other is labelled as **Reason (R) :**

Assertion (A) :

Spirulina is a microbe that can be used for reducing environmental pollution.

Reason (R) :

Spirulina is a rich source of protein, carbohydrates, fats, minerals and vitamins.

In the light of the above statements, choose the **most appropriate answer** from the options given below:
(1) Both **(A)** and **(R)** are correct and **(R)** is the correct explanation of **(A)**
(2) Both **(A)** and **(R)** are correct but **(R)** is not the correct explanation of **(A)**
(3) **(A)** is correct but **(R)** is not correct
(4) **(A)** is not correct but **(R)** is correct

EXERCISE-II (Previous Year Questions) ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	4	4	2	2	4	2	4	2	4	1	3	1	3	1	1
Question	16	17	18	19	20	21									
Answer	1	1	2	2	2	2									

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Exercise - III Master Your Understanding

EXERCISE-III (A) NCERT BASED QUESTIONS

1. 'P-1542' is a hybrid variety of which plant ?
(1) Wheat (2) Rice
(3) Maize (4) Pea

2. "Jaya" and "Ratna" are better yielding semi dwarf varieties of rice. These varieties are developed in which country ?
(1) Japan (2) India
(3) Phillipins (4) Mexico

3. *Saccharum barberi* had poor sugar content and yield. This variety of sugar cane mainly grown in which part of India ?
(1) South India (2) East India
(3) North India (4) West India

4. The conventional method of breeding for disease resistance in plants is :-
(1) Hybridisation (2) Selection
(3) Mutation (4) Both (1) and (2)

5. Parbhani Kranti, which has resistance to yellow mosaic virus is a variety of :-
(1) Wheat (2) Cow pea
(3) Bhindi (4) Chilli

6. Production of thousands of plants through tissue culture method is called :-
(1) Macropropagation
(2) Micropropagation
(3) Somatic embryo
(4) Totipotency

7. Plants produced by tissue culture method are called :-
(1) Explant
(2) Somaclones
(3) Micropropagation
(4) SCP (Single cell protein)

8. Which chemical is used in somatic hybridisation ?
(1) Polyethyline glycol
(2) Acredine
(3) HNO_2
(4) Ethenol

9. Green revolution was dependent to a large extent on plant breeding techniques for development of :-
(1) High yielding varieties
(2) Disease resistant varieties
(3) Wild varieties
(4) Both (1) and (2)

10. Classical plant breeding involves:-
(1) Hybridisation of pure lines exclusively
(2) Hybridisation of pure lines followed by artificial selection
(3) Artificial selection exclusively
(4) Mutation breeding

EXERCISE-III (B) (ANALYTICAL QUESTIONS)

11. Which of the following is root of any plant breeding programme?
(1) Genetic variability
(2) Evaluation and selection of parents
(3) Cross hybridisation among selected parents
(4) Selection of superior recombinants

12. Which of the following rice variety were developed in India?
(1) IR - 8 (2) IR - 36 (3) TN - 1 (4) Jaya

13. Match the following :-

A.	Himgiri variety	i. White rust
B.	Pusa swarnim	ii. Hill bunt
C.	Pusa shubhra	iii. Leaf curl
D.	Pusa sadabahar	iv. Black rot

	A	B	C	D
(1)	ii	i	iii	iv
(2)	i	ii	iv	iii
(3)	ii	i	iv	iii
(4)	i	ii	iii	iv

14. About disease resistant varieties of plant select out the incorrect match:-
(1) Wheat – Himgiri
(2) Brassica – Pusa swarnim
(3) Cauliflower – Pusa shubhra
(4) Cowpea – Pusa snowball K1

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15. Parbhani kranti variety of *Ablemoschus esculentus* was created for resistance against which of the following disease?
(1) Yellow mosaic virus
(2) Curl blight black rot
(3) White rust
(4) Powdery mildew

16. Resistance to jassids in cotton and cereal leaf beetles in wheat is due to which of the following morphological / physiological / Biochemical characteristic?
(1) Solid stem
(2) Nectorlessness
(3) High aspartic acid
(4) Hairy leaves

17. Breeding crops with higher levels of vitamins and minerals, higher proteins and healthier fats is known as :-
(1) Bioremediation
(2) Biomagnification
(3) Biofortification
(4) Biotransformation

18. Biofortified rice are enriched in which of the following nutrient?
(1) Iron
(2) Amino acids
(3) Fatty acids
(4) Essential amino acids

19. Match the following :-

A.	Vitamin A rich	i	Lablab
B.	Vitamin C rich	ii	Spinach
C.	Fe and Ca Rich	iii	Bitter gaurd
D.	Protein Rich	iv	Carrot

	A	**B**	**C**	**D**
(1)	iv	iii	ii	i
(2)	iv	iii	i	ii
(3)	iii	iv	ii	i
(4)	iii	iv	i	ii

20. Each of the plant obtained through tissue culture are genetically identical to the original plant from which they were grown are known as:-
(1) Genocopies
(2) Somaclonal variants
(3) Somaclones
(4) Phenocopies

EXERCISE - III ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	4	2	3	4	3	2	2	1	4	2	1	4	3	4	1
Question	16	17	18	19	20										
Answer	4	3	1	1	3										

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